

WHAT IS CLAIMED IS:

1. A semiconductor laser device comprising:
a dielectric multilayer film with a reflectance of 40%
or more, formed on at least one of optical exit faces of a
5 laser chip;

wherein the dielectric multilayer film includes a
dielectric film of tantalum oxide.

2. The semiconductor laser device according to Claim
1, wherein the dielectric multilayer film includes a
10 dielectric film of aluminum oxide and the dielectric film
of tantalum oxide.

3. The semiconductor laser device according to Claim
1, wherein the dielectric multilayer film includes a
dielectric film of aluminum oxide for a film in contact
15 with the laser chip, and further includes a dielectric film
of silicon oxide and the dielectric film of tantalum oxide.

4. The semiconductor laser device according to Claim
2, wherein the dielectric multilayer film is configured of
total nine layers of, in sequence from the side contact
20 with the laser chip, an aluminum oxide film, a tantalum
oxide film, an aluminum oxide film, a tantalum oxide film,
an aluminum oxide film, a tantalum oxide film, an aluminum
oxide film, a tantalum oxide film, an aluminum oxide film.

5. The semiconductor laser device according to Claim
25 4, wherein each thickness of the first to eighth layers,

from the side contact with the laser chip, in the dielectric multilayer film is equivalent to $\lambda/4$ in terms of optical length using oscillation wavelength λ of the laser chip, and thickness of the ninth layer is equivalent to $\lambda/2$ in terms of optical length.

6. The semiconductor laser device according to Claim 3, wherein the dielectric multilayer film is configured of total eight layers of, in sequence from the side contact with the laser chip, an aluminum oxide film, a silicon film, a tantalum oxide film, a silicon film, a tantalum oxide film, a silicon film, a tantalum oxide film, and a silicon film.

7. The semiconductor laser device according to Claim 6, wherein thickness of the first layer, from the side contact with the laser chip, in the dielectric multilayer film is equivalent to $\lambda/2$ in terms of optical length using oscillation wavelength λ of the laser chip, and each thickness of the second to seventh layers is equivalent to $\lambda/4$ in terms of optical length, and thickness of the eighth layer is equivalent to $\lambda/2$ in terms of optical length.